

an elongate, flexible delivery catheter having a distal end, a lumen extending longitudinally therethrough and terminating in a distal end opening, said delivery catheter being advanceable into the blood vessel lumen wherein the intravascular member is to be implanted;

an intravascular member which has a collapsed configuration and an expanded configuration, said intravascular member being disposed within the lumen of the delivery catheter while in its collapsed configuration;

an advancer apparatus for advancing the intravascular member out of the distal end opening lumen of <sup>29</sup>the third catheter, said intravascular member being connected to the advancer apparatus by way of a releasable connection,

2 said advancer apparatus being useable to advance the intravascular member out of the distal end opening of the catheter such that the intravascular member will transition to its expanded configuration within the blood vessel lumen while remaining connected to the advancer apparatus by way of said releasable connection, said releasable connection being thereafter volitionally severable such that the delivery catheter and advancer apparatus may be removed from the blood vessel lumen leaving the expanded intravascular member implanted in said blood vessel lumen.

132. A system according to Claim 1 wherein the intravascular member comprises a strand that is substantially linear when said collapsed configuration and substantially curvilinear when in said expanded configuration.

133. A system according to Claim 2 wherein the strand forms a helix when in said expanded configuration.

134. A system according to Claim 1 further comprising apparatus for releasing the releasable connection.

NE 135. A system according to Claim 4 wherein the apparatus for releasing the releasable connection comprises a ball and claw.

136. A system according to Claim 4 wherein the releasable connection is releasable by being cut and wherein the apparatus for releasing the releasable connection comprises apparatus for cutting the releasable connection.

137. A system according to Claim 4 wherein the releasable connection is releasable in response to an electrical discharge and wherein the apparatus for releasing the releasable connection comprises apparatus to delivering an electrical discharge.

2, 138. A method for treating a mammalian patient who has a defect in the wall of a blood vessel that has a lumen and a wall, said method comprising the steps of:

- A. providing a system which comprises; i) a delivery catheter that has a distal end, a lumen that extends longitudinally therethrough and terminates in a distal end opening, ii) an intravascular member which has a collapsed configuration and an expanded configuration, said intravascular member being disposed within the lumen of the delivery catheter while in its collapsed configuration and iii) an advancer apparatus for advancing the intravascular member out of the distal end opening lumen of (the third catheter), said intravascular member being connected to the advancer apparatus by way of a releasable connection;
- B. positioning the delivery catheter within the blood vessel such that its distal end opening is near the defect in the wall of the blood vessel;
- C. using the advancer apparatus to advance the intravascular member out of the distal end opening of the delivery catheter such that the intravascular member will transition to its expanded configuration within the blood vessel lumen adjacent to the defect and engage the wall of the blood vessel so as to be held in substantially fixed position within the vessel lumen adjacent to the vessel wall defect and such that a blood flow channel is defined
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through the intravascular member to permit blood to flow through the intravascular member when it is positioned in the blood vessel; and,

- D. releasing the releasable connection and removing the delivery catheter, thereby leaving the expanded intravascular member implanted within the blood vessel lumen adjacent to the defect. *explain*

*112*  
139. A method according to Claim 138 wherein the performance of Steps B and C comprises:

placing a first catheter at a first position within the patient's vasculature;

*2*  
advancing a second catheter through the lumen of the first catheter and to a second position within the patient's vasculature;

advancing the delivery catheter through the lumen of the second catheter to a third position within the patient's vasculature adjacent the vessel wall defect; and

while the first, second and *MP* (third catheters) are in their respective first, second and third positions, advancing the intravascular member out of the lumen of the third catheter such that the intravascular member assumes its radially expanded configuration.

140. A method according to Claim 138 further comprising the steps of:

E. providing an embolus member sized to fit within the vessel wall defect; and,

F. positioning the embolus member within the vessel wall defect such that the intravascular member retains the embolus member within the vessel wall defect.

141. A method according to Claim 140 wherein Step F is performed after Step C.

142. A method according to Claim 140 wherein Step F is performed before Step C.

143. A method according to Claim 141 wherein Step F comprises:

- i positioning a delivery catheter having a distal end within the intravascular member after it has been radially expanded in Step E;
- ii causing the distal end of the delivery catheter to advance through a portion of the intravascular member and into the vessel wall defect;
- iii delivering the embolus member out of the distal end of the delivery catheter and into the vessel wall defect; and,
- iv removing the delivery catheter, leaving the embolus member within the vessel wall defect with the intravascular member preventing the embolus member from escaping from the vessel wall defect into the lumen of the blood vessel.

144. A method according to Claim 140 wherein the vessel wall defect is an aneurysm and wherein Step F comprises positioning the embolus member within the aneurysm.

145. A method according to Claim 144 wherein the aneurysm is a wide mouthed aneurysm and wherein Step F comprises delivering the embolus member through the mouth of the aneurysm and into the aneurysm sac.

146. A method according to Claim 140 wherein the embolic member delivered in Step F comprises a thrombogenic member.